

IN THE CLAIMS:

Claims 1 - 22 (Canceled)

23. (Previously presented) A method of producing a positive electrode active material for a non-aqueous electrolyte cell, comprising the sequential steps of:

- (1) mixing ingredients of a lithium composite manganese oxide;
- (2) molding the mixture under pressure; and
- (3) sintering the molded mixture at a temperature not lower than 600°C and not higher than 850°C, wherein

(a) the positive electrode active material comprises lithium composite manganese oxide having a spinel structure whose primary particle diameter is not less than 0.05 μm and not greater than 10 μm forming an aggregate, and whose specific surface area measured by the BET method is not less than 0.2 m^2/g and not greater than 2 m^2/g ;

(b) the non-aqueous electrolyte cell comprises a negative electrode having a material capable of reversibly doping and dedoping lithium, wherein the material capable of reversibly doping and dedoping lithium is at least one selected from the group consisting of a carbon material, metal lithium, lithium alloy, polyacene, and polypyrrol;

(c) wherein the carbon material is at least one selected from the group consisting of pyrocarbon, coke, glassy carbon, organic polymer compound sintered body, and carbon fiber; and

(d) wherein the lithium composite manganese oxide is expressed by a general formula $\text{Li}_x\text{Mn}_{2-y}\text{M}_y\text{O}_4$, wherein $.09 \leq x \leq 1.4$; $0 < y < .3$; and M is one or more materials selected from the group consisting of Ti, V, Cr, Fe, Co, Ni, and Al.

24. (Previously Presented) The method of claim 23, wherein the spinel structure has a primary particle diameter that is not less than 0.1 μm and not greater than 5 μm .

25. (Previously Presented) The method of claim 23, wherein the spinel structure has a primary particle diameter that is not less than 0.5 μm and not greater than 3 μm .

26. (Previously Presented) The method of claim 23, further comprising pulverizing the sintered mixture.

27. (Previously Presented) The method of claim 23, wherein the non-aqueous electrolyte cell comprises a positive electrode including graphite and binder in addition to the positive electrode active material.

28. (Previously Presented) The method of claim 27, wherein the positive electrode comprising a metal foil and a positive electrode composite agent on said metal foil, said positive electrode composite agent containing the positive electrode active material and the binder dissolved in a solvent to create a slurry uniformly applied on said metal foil and dried.

Claims 29-34 (Canceled)

35. (Previously presented) A method of producing a positive electrode active material for a non-aqueous electrolyte cell, comprising the sequence steps of:

- (1) mixing ingredients of a lithium composite manganese oxide;
- (2) molding the mixture under pressure; and

(3) sintering the molded mixture at a temperature not lower than 600°C and not higher than 850°C, wherein the positive electrode active material comprises lithium composite manganese oxide having a spinel structure whose primary particle diameter is not less than 0.05 μm and not greater than 10 μm forming an aggregate, and whose specific surface area measured by the BET method is not less than 0.2 m^2/g and not greater than 2 m^2/g .